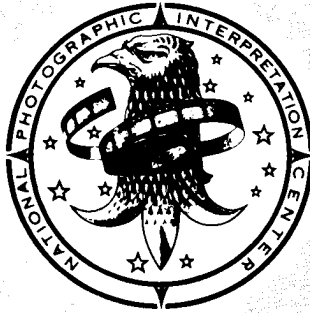


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**NATIONAL PHOTOGRAPHIC  
INTERPRETATION CENTER**

**P**HOOTOGRAPHIC  
**I**NTERPRETATION  
**R**EPORT

25X1

# **VESNA-TYPE RADIO RELAY FACILITIES, NORTH KOREA**

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MAY 1977

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PIR-012/77

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**DISSEMINATION CONTROL ABBREVIATIONS**

NOFORN-	Not Releasable to Foreign Nationals
NOCONTRACT-	Not Releasable to Contractors or Contractor/Consultants
PROPIN-	Caution-Proprietary Information Involved
USIBONLY-	USIB Departments Only
ORCON-	Dissemination and Extraction of Information Controlled by Originator
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## **VESNA-TYPE RADIO RELAY FACILITIES, NORTH KOREA**

### **ABSTRACT**

1. This report contains information pertaining to Vesna-type radio relay stations in North Korea. It updates NPIC report [ ] August 1976, and includes a location map, two photographs, and a table.

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### **INTRODUCTION**

2. North Korea has continued to upgrade and expand its radio relay (radrel) communications capability. Construction on a second-generation radrel system equipped with Vesna horn antennas was initially observed in November 1975.<sup>1</sup> This new system will provide North Korea with an increased capability vis-a-vis the existing parabolic dish antenna network.

### **BASIC DESCRIPTION**

3. Nineteen Vesna-type radrel stations have been identified in North Korea (Figure 1 and Table 1). Nearly identical in size and configuration, these facilities have common photographic signatures which include a self-supporting lattice tower, approximately 24 meters high; a circular control building, approximately 10 meters in diameter, beneath the tower; two support buildings; and at least one power trace extending from the control area. Terrain elevations of these stations range from 85 to 2,040 meters. None of these installations is collocated with previously reported radrel stations.<sup>2</sup>

4. Vesna horn antennas have been observed either tower mounted or lying on the ground at 16 of the 19 facilities. In most instances, four horn antennas have been identified at these installations; however, six Vesna antennas have been seen at Yonghung and Sangwon-ni radrel stations.

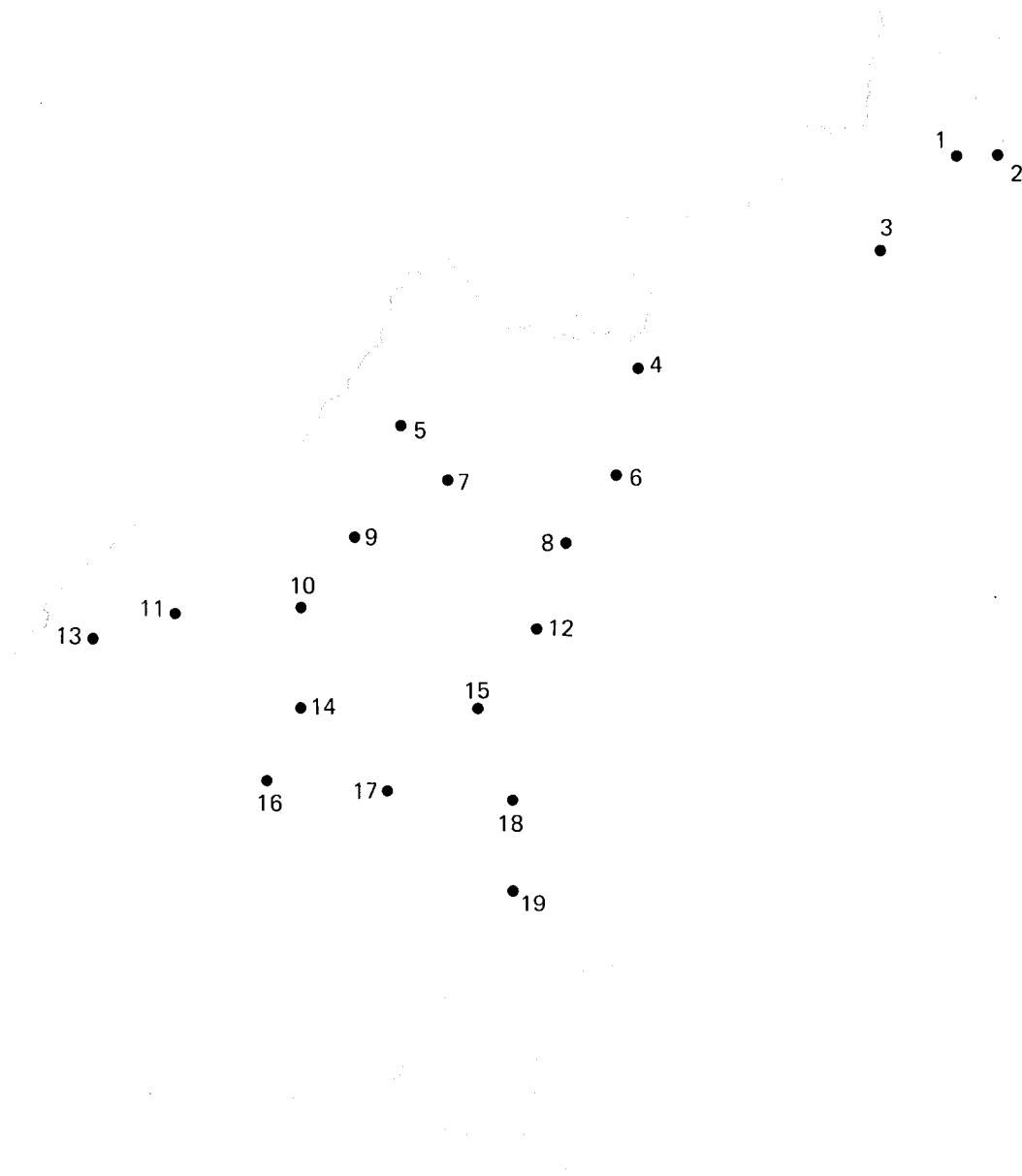
5. Of the 19 Vesna-type radrel stations, eight appeared complete and eight were in the mid- to late-stage of construction by November 1976. The remaining three installations were in early stages of construction. Interpretable coverage of these 19 stations was not available between November 1976 and 1 April 1977.

6. At Hyesan Radrel Station (Figures 1 and 2; Table 1), early-stage construction was in progress on the circular control building and the lattice tower.

7. Construction appeared complete at Najin Radrel Station (Figures 1 and 3; Table 1) where Vesna antennas were mounted on the lattice tower.

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(Items keyed to Table 1)

NPIC S-2807

FIGURE 1. LOCATIONS OF VESNA-TYPE RADIO RELAY STATIONS, NORTH KOREA

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**IMAGERY ANALYST'S COMMENTS**

8. It is likely that additional Vesna-type radrel stations have been or will be constructed where gaps in site locations exist, particularly along the northeastern coast and possibly in the southwestern quadrant of the country (Figure 1).

9. Because of the configuration of these installations, high-resolution imagery will be required to provide Vesna antenna orientations.

*Table 1. Vesna-Type Radio Relay Stations, North Korea  
(Items Keyed to Figure 1)*

Item	Installation	Geographic Coordinates	Approximate Elevation (Meters)	
1	Najin Radrel Sta [REDACTED]	42-16-15N 130-20-40E	381	25X1
2	Sosura Radrel Sta [REDACTED]	42-16-00N 130-35-52E	85	25X1
3	Chongjin Radrel Sta [REDACTED]	41-48-25N 129-49-30E	229	25X1
4	Hyesan Radrel Sta [REDACTED]	41-16-20N 128-12-10E	1,352	25X1
5	Kanggye Radrel Sta [REDACTED]	41-00-00N 126-39-18E	501	25X1
6	Hwangsuwon-ni Radrel Sta [REDACTED]	40-46-30N 128-03-00E	1,880	25X1
7	Pyorha-ri Radrel Sta [REDACTED]	40-46-00N 126-56-00E	2,040	25X1
8	Pujon Radrel Sta [REDACTED]	40-26-30N 127-44-00E	1,829	25X1
9	Koin-ni Radrel Sta [REDACTED]	40-25-20N 126-20-20E	914	25X1
10	Sangwon-ni Radrel Sta [REDACTED]	40-07-30N 126-00-10E	838	25X1
11	Kusong Radrel Sta [REDACTED]	40-03-50N 125-09-20E	701	25X1
12	Hamhung Radrel Sta [REDACTED]	39-57-00N 127-32-25E	395	25X1
13	Yomju Radrel Sta [REDACTED]	39-52-45N 124-38-30E	248	25X1
14	Pukchang-ni Radrel Sta [REDACTED]	39-34-25N 126-00-45E	914	25X1
15	Yonghung Radrel Sta [REDACTED]	39-34-20N 126-57-00E	1,324	25X1
16	Pyeong-ni Radrel Sta [REDACTED]	39-14-15N 125-49-40E	320	25X1
17	Yanadok Radrel Sta [REDACTED]	39-12-00N 126-32-50E	1,180	25X1
18	Wonsan Radrel Sta [REDACTED]	39-07-45N 127-24-30E	320	25X1
19	Sepo Radrel Sta [REDACTED]	38-42-20N 127-23-25E	1,030	25X1

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**REFERENCES**

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**MAPS OR CHARTS**

DOD. US Air Target Charts; Series 200, Sheets 0290-15, -18, -19, -22 to -24, and 0380-2 to -4, and -8 to -9; scale 1:200,000

**DOCUMENTS**

1. NPIC. [REDACTED] PIR-013/76, *New Radio Relay Facility Construction, North Korea*, Aug 76 (TOP SECRET RUFF) [REDACTED]
2. NPIC. [REDACTED] RCA-03/0020/75, *Radio Relay Facilities, North Korea, February 1975*, Jun 75 (TOP SECRET RUFF) [REDACTED]

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**REQUIREMENT**

Project 121200NE

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## List of Conversion Factors by Classification

### UNITS OF LENGTH

<i>IF YOU HAVE</i>	<i>MULTIPLY BY</i>	<i>TO OBTAIN</i>
MILLIMETERS	0.0394	INCHES
CENTIMETERS	0.3937	INCHES
INCHES	25.4000	MILLIMETERS
INCHES	2.5400	CENTIMETERS
FEET	0.3048	METERS
FEET	0.0003	KILOMETERS
YARDS	0.9144	METERS
METERS	3.2808	FEET
METERS	0.0005	MILES(AUTICAL)
METERS	1.0936	YARDS
KILOMETERS	3280.8400	FEET
KILOMETERS	0.6214	MILES(STATUTE)
KILOMETERS	0.5400	MILES(AUTICAL)
MILES(STATUTE)	1.6093	KILOMETERS
MILES(AUTICAL)	6076.1154	FEET
MILES(AUTICAL)	1.8520	KILOMETERS
MILES(AUTICAL)	1852.0000	METERS

### UNITS OF MASS

<i>IF YOU HAVE</i>	<i>MULTIPLY BY</i>	<i>TO OBTAIN</i>
KILOGRAMS	2.2046	POUNDS(AVOIR.)
POUNDS(AVOIR.)	0.4536	KILOGRAMS
SHORT TONS	0.9072	METRIC TONS
METRIC TONS	1.1023	SHORT TONS
METRIC TONS	0.9842	LONG TONS
LONG TONS	1.0160	METRIC TONS

### UNITS OF VOLUME

<i>IF YOU HAVE</i>	<i>MULTIPLY BY</i>	<i>TO OBTAIN</i>
LITERS	0.2642	GALLONS
LITERS	0.0063	BARRELS(POL)
LITERS	0.0010	CUBIC METERS
GALLONS	3.7854	LITERS
GALLONS	0.1337	CUBIC FEET
GALLONS	0.0238	BARRELS(POL)
GALLONS	0.0038	CUBIC METERS
BUSHELS	0.0352	CUBIC METERS
CUBIC FEET	7.4805	GALLONS
CUBIC FEET	0.1781	BARRELS(POL)
CUBIC FEET	0.0283	CUBIC METERS
CUBIC YARDS	0.7646	CUBIC METERS
BARRELS(POL)	158.9873	LITERS
BARRELS(POL)	42.0000	GALLONS
BARRELS(POL)	5.6146	CUBIC FEET
BARRELS(POL)	0.1590	CUBIC METERS
CUBIC METERS	1000.0000	LITERS
CUBIC METERS	264.1721	GALLONS
CUBIC METERS	35.3147	CUBIC FEET
CUBIC METERS	28.3776	BUSHELS
CUBIC METERS	6.2898	BARRELS(POL)
CUBIC METERS	1.3080	CUBIC YARDS

### UNITS OF AREA

<i>IF YOU HAVE</i>	<i>MULTIPLY BY</i>	<i>TO OBTAIN</i>
SQUARE CENTIMETERS	0.1550	SQUARE INCHES
SQUARE INCHES	6.4516	SQUARE CENTIMETERS
SQUARE FEET	0.0929	SQUARE METERS
SQUARE YARDS	0.8361	SQUARE METERS
SQUARE METERS	10.7639	SQUARE FEET
SQUARE METERS	1.1960	SQUARE YARDS
SQUARE METERS	1.0000	CENTARES
SQUARE METERS	0.0002	ACRES
SQUARE METERS	0.0001	HECTARES
ACRES	4046.8564	SQUARE METERS
ACRES	0.4047	HECTARES
HECTARES	10000.0000	SQUARE METERS
HECTARES	2.4711	ACRES



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